

In the United States Patent and Trademark Office

Patent Number: 6,223,125 B1  
Date of Patent: April 24, 2001  
Applicant: Brett O. Hall  
Application Title: COLLISION AVOIDANCE SYSTEM  
Examiner / GAU: Eric M. Gibson / 3661

**REISSUE AMENDMENTS, JUSTIFICATION AND CLAIM STATUS**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

Please amend the above-identified patent as follows:

**In the Claims:**

Claim 1 (Amended). A collision avoidance system, comprising:

- a) a plurality of [vehicle] trigger sensors each associated with a roadway, each said [vehicle] trigger sensor capable of sensing at least one parameter [of] <sup>associated</sup> ~~association with~~ one or more vehicles;
- b) a plurality of vehicle restrictors each associated with said roadway, each said restrictor comprising an elongate member disposed generally transverse to said roadway, each said restrictor capable of being actuated to raise or lower relative to said roadway surface to impede passage thereover of said vehicles; and
- c) a controller programmed to determine the likelihood of a collision [between] involving any of said vehicles based on said vehicle parameters received from said trigger sensors, programmed to determine which of a selected one or more of said vehicles should be slowed or stopped to avoid said collision based on said vehicle parameters and based on local traffic laws, and programmed to determine at least one selected vehicle restrictor that is being approached by said selected vehicle, wherein said at least one selected vehicle restrictor is actuated by

communication from said controller to impede the passage of said selected vehicle to avoid said collision.

Claim 2 (Amended). The collision avoidance system of Claim 1, wherein said at least one vehicle parameter is selected from the group **[consisting] comprised** of vehicle presence, position, direction, or speed.

Claim 3 (Amended). The collision avoidance system of Claim 1, wherein said at least one trigger sensor is selected from the group **[consisting] of technologies capable of detecting vehicle parameters including** radar devices, lasers, optical devices, ultrasonic devices, induction loop devices, wireless transmitters and receivers, pressure-responsive switches, and combinations thereof.

Claim 8 (Amended). The collision avoidance system of claim 1, further comprising a monitoring device associated with said roadway and in real time communication with emergency law enforcement, medical, **[or]** fire department **or other predetermined** personnel.

Add as new Claim 22

**22. The collision avoidance system of claim 1, further comprising a control means to adjust operational parameters, whereby system responses are changed.**

Add as new Claim 23

**23. A collision avoidance system, comprising:**

- a) **a traffic command signal associated with a roadway and initiated by a traffic control device;**
- b) **a plurality of vehicle restrictors each associated with said roadway, each said restrictor comprising an elongate member disposed**

generally transverse to said roadway, each said restrictor capable of being actuated to raise or lower relative to said roadway surface to impede passage thereover of vehicles; and

- c) a controller responsive to the status of said traffic command signal, wherein said at least one selected vehicle restrictor is actuated by communication from said controller to impede the passage of said vehicles.

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#### JUSTIFICATION for REISSUE CLAIM AMENDMENTS

##### Justification for Claim 1(a):

Column 6, lines 47-56 describes that trigger sensors may be related to either technology to detect vehicle parameters (as in claim 3) or environmental conditions (as in claim 4). The noted corrections provide more appropriate dependency of claims 3 and 4 as the trigger sensors of claim 1.

##### Justification for Claim 1(c):

In the narrowest reading, the word "between" could be interpreted as limited to vehicle-to-vehicle collisions. The invention clearly states throughout the specification and the claims that not only are vehicle-to-vehicle collisions prevented but vehicle-to-pedestrian and vehicle-to-train collisions as well. Therefore, the word "involving" provides a broader reading than the word "between".

##### Justification for Claim 2:

As in claims 12, 15, 17 and 21, the mentioned parameters in claim 2 were intended to be included parameters but not exclusive parameters. This is indicated in column 6, line 49 "Those parameters primarily **include** the presence, position, direction, and speed of a vehicle ...".

##### Justification for Claim 3:

Column 6, line 63 describes the mentioned sensors used to detect vehicle parameters as "typical" but not exclusive. Column 6, line 66 through column 7, line 2 provides further support that the means of detecting parameters are not confined to those listed.

##### Justification for Claim 8:

Authorities other than those listed in original claim 8 are described as being contacted in the specification. For example, column 16, lines 50-51

1. General information	
1.1. Name of the project	1.2. Name of the institution
1.3. Address	1.4. Telephone
1.5. Fax	1.6. E-mail
1.7. Web site	1.8. Other contact information
1.9. Date of completion	
1.10. Date of submission	
1.11. Date of publication	
1.12. Date of revision	
1.13. Date of acceptance	
1.14. Date of withdrawal	
1.15. Date of cancellation	
1.16. Date of completion	
1.17. Date of submission	
1.18. Date of publication	
1.19. Date of revision	
1.20. Date of acceptance	
1.21. Date of withdrawal	
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1.100. Date of completion	

This addition is supported by column 7, lines 6-9 and column 7, lines 16-20. Further supported is given by item 40a in Figures 3, 4, 6, and 7. This claim was inadvertently omitted in responding to the first office action.

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